R. HAY.
Draw-Bar.

No. 217,615. Patented July 15, 1879.

Fig. 1.

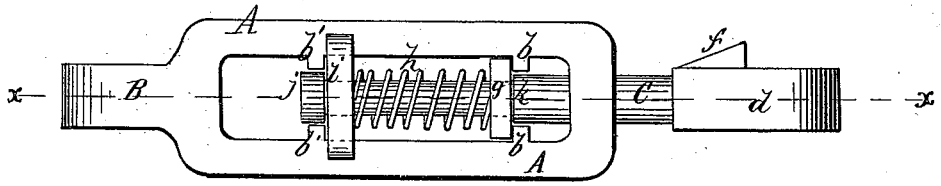
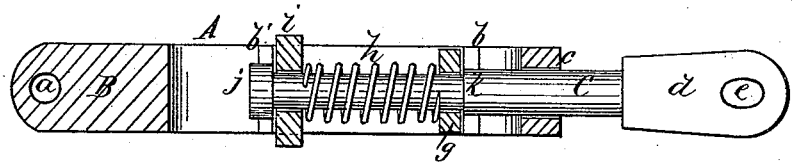


Fig. 2.



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UNITED STATES PATENT OFFICE.

ROBERT HAY, OF MINERAL POINT, WISCONSIN.

IMPROVEMENT IN DRAW-BARS.

Specification forming part of Letters Patent No. **217,615**, dated July 15, 1879; application filed June 11, 1879.

To all whom it may concern:

Be it known that I, ROBERT HAY, of Mineral Point, in the county of Iowa and State of Wisconsin, have invented a new and Improved Draw-Bar, of which the following is a specification.

This invention relates specifically to improvements in draw-bars or tail-bars for locomotive-tenders to couple them with the train.

Heretofore common coupling-links have been used for this purpose, also rigid connections or couplings; and, in some instances, to lessen the shock of coupling the tender to the train and the strain in starting, bumper-beams and spring-bumpers have been attached to the tender; but these devices are objectionable, the coupling-link and the rigid connection giving no relief in coupling and starting, and the bumpers and bumper-beams being too cumbersome and complicated.

The object of my invention is to furnish an efficient draw-bar and spring-bumper in one.

It consists of a frame adapted to be connected with the tender, and provided with a coupling-bar carrying cross-heads and a spiral spring within the frame, so that when drawn or pushed it is cushioned by the spring, and thus relieves the shock and strain on the engine.

In the accompanying drawings, Figure 1 is a plan of my improved draw-bar; and Fig. 2 is a longitudinal section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A is a rectangular frame, having on one end a projection, B, with a hole, *a*, through it for the coupling-pin. This projection is entered into the draw-head of the tender and secured by a coupling-pin.

To each side of the frame, on the inside, are placed two lugs, *b b′*, opposite each other and some distance apart, and through the end of the frame opposite the projection B is made a hole, *c*, in the direction of its length.

C is a coupling-bar, provided with a head, *d*, having a coupling-pin hole, *e*, through it, and back of this hole, on the under side, a lug, *f*, to bear against the draw-head of the car to which the tender is coupled in backing, and thus relieve the coupling-pin.

The shaft of the coupling-bar is passed through the hole *c*, then through a cross-head, *g*, a spiral spring, *h*, a cross-head, *i*, provided with lips overlapping the edges of the side bars of the frame, and on its extreme end is fixed a collar, *j*, to prevent its drawing out.

The cross-heads, it will be observed, are held between the lugs *b b′*, and the part of the shaft passed through the cross-heads and the spring is reduced, forming a shoulder, *k*, next to its head.

When drawing, the collar *j*, bearing against the cross-head *i*, pushes it against the spring; and when pushing, the cross-head *g* is thrust against the spring by the shoulder *k*, and the lugs *b b′* sustain the pressure of the spring. Thus, in whatever way the engine moves, the strain is graduated and relieved by the spring *h*, upon which the traction falls; and in the shocks consequent upon coupling the tender to the cars the spring takes it up and relieves the engine.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

As an improvement in draw-bars for locomotives, the frame A, with projection B and lugs *b b′*, in combination with the coupling-bar C, having head *d*, shoulder *k*, and collar *j*, the cross-heads *g i*, and intermediate spiral spring *h*, whereby, when the engine is in motion, the coupling-bar bears against the spring through the cross-heads, and the strain is taken up by the spring, substantially as described.

ROBERT HAY.

Witnesses:
NEIL MCVICAR,
JOHN P. HAMBLY.